Notes & Queries

HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters, or no attention will be paid thereto. This is for our information, and not for publication.
References to former articles or answers should give date of paper and page or number of question.
Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all, either by letter or in this department, each must take his turn.
Special Written Information on matters of personal rather than general interest cannot be expected without remuneration.
Scientific American Supplements referred to may be had at the office. Price 10 cents each.
Books referred to promptly supplied on receipt of price.
Minerals sent for examination should be distinctly marked or labeled.

(1) W. W. Q. writes: I have two baths which I have been using for plating; one is of cyanide of silver and the other of cyanide of gold; how can I reduce these baths so as to obtain metallic silver and gold? A. Precipitate with zinc clippings and sulphuric acid, and dissolve out the excess of zinc with more sulphuric acid. Do not work at it in a closed room, as poisonous gas may be evolved.

(2) S. M. M. desires a recipe for preserving rose leaves, as we see them in jars in art stores. A. Put a handful of salt on the bottom of an earthen jar, then a layer of leaves, and repeat this alternately until the jar is filled. Keep the jar as much as possible in a cool place, and covered over when the leaves are not to be exposed.

(3) A. F. asks: 1. Will paper varnished with common furniture varnish be good material for use in an induction coil? A. Shellac is generally used, and will save time in drying. The other will answer, but may need baking after each application. 2. I have a small magneto-electric machine, such as is used in ringing telephone bells; will it work a small induction coil, and what kind of a current does it produce, no commutator being used? A. It will work a small induction coil, giving the usual "shuttle" current. 3. I have a large number of small spools wound with No. 36 silk-covered wire, each spool containing about 1¼ ounces of wire; can I use the wire for making an induction coil, and if so, how should the spools be connected and how should the layers be insulated? A. You can use the wire, but must rewind it. See SUPPLEMENT, Nos. 160 and 166, for full instructions.

(4) J. M. G. asks: 1. Can you give me a receipt for starching India paper? A. See article on "India Paper," page 149, SCIENTIFIC AMERICAN for March 5, 1887, for this information. 2. Can you tell me how to burn or boil linseed oil? A. Linseed oil in the proportion of 1 gallon with ¾ pound litharge is allowed to simmer with frequent stirring until a skin begins to form, which scum is then removed, and when the oil has become cold and settled, the clear portion is decanted and called boiled oil. 3. What effect has sugar of lead on printing inks? A. If combined with the linseed oil, it would tend to make a quick-drying ink.

(5) T. H. K. writes: In tinning copper vessels, I have them scoured out with sand after they have been in sulphuric acid water a day or so, and when I come to tinning, use a forge heat, and tin with pure block tin and sal ammoniac, but the tinning will not adhere to the copper on some parts. A. A forge blast is very uncertain, and apt to overheat spots before the tin takes. A charcoal furnace is better. You should be able to tin vessels or kettles with powdered resin sprinkled on the surface, by pouring on the melted tin, having it quite hot, and allowing the surplus to run off at once back into the melting pot. A little powdered sal ammoniac will help the flow if it becomes lumpy. Brushing the clean surface of the copper with a saturated solution of zinc and sal ammoniac in hydrochloric acid (tinman's acid) should also work well, pouring the hot tin quickly. We fear that your whole trouble comes from the treacherous forge fire.

(6) J. E. S. asks the best explanation of the fact that the moon appears larger when near the horizon than when high in the heavens. A. The atmosphere by its refraction acts as a lens, producing an apparent increase in diameter near the horizon. Some claim that it is only an optical illusion; yet, when we consider that the atmosphere as seen from the surface of the globe is a section of a vast lens whose radius is the semi-diameter of the earth, it is reasonable to assume a small increase in the size of objects seen through it, and a still greater increase when seen in the obliquity of the horizon, in the same manner as an object is seen at a low angle through a long focus lens, or by turning it edgewise.

(7) A. S. E. asks (1) how to clean Quincy granite when rusty, after being exposed to the weather a few years. A. Use strong lye, or make a hot solution of 3 pounds of common washing soda dissolved in a gallon of water. Lay it on the granite with a paint brush. 2. What is the cause of Italian marble having a greasy appearance after being in the weather a few years? A. The discoloration is due to the gases in the air, and the marble can be cleaned similarly to the method as above given.

(8) G. R. R. asks how to restore the luster of morocco leather, such as is used for blinds and saddles in harness. A. It is probably patent or japanned leather on your harness, instead of morocco; such luster is put on by baking on a special black varnish in an oven. A paste suitable to preserve gloss of patent leather and prevent cracking is made of wax with a little olive oil, lard, and oil of turpentine, mixed when warm, to be of the consistency of thick paste when cooled.

(9) J. E. writes: I have a large ash heap which I wish to use for walks around the house. Can you tell me what to mix with it to make a cheap and durable walk? A. Mix ordinary clay with your ashes, and it will make a good walk. 2. Also how to clean a marble slab that has become discolored from use? A. Take 2 parts of common soda, 1 part of pumice stone, and 1 part of finely powdered chalk; sift it through a fine sieve and mix it with water; then rub it well all over the marble, washing with soap and water.

(10) E. G. G. desires some method of wholly or partially decolorizing vinegar. A. Filter it through charcoal or add a handful of charcoal to a barrel containing it. Agitate thoroughly and then filter.

(11) J. E. A. asks: What will clean a white Derby hat? A. Wash in a hot solution of carbonate of soda or sesquicarbonate of ammonia; but it is difficult for even an expert to clean such stock without destroying the original finish.

(12) R. B. W.—For plain directions for making a simple telephone, see SUPPLEMENT, No. 142; for making colored fires see details in SUPPLEMENT, Nos. 49 and 317.

(13) C. H. desires a receipt or preparation to clean and polish knives, forks, and tinware. A. Rub with equal portions of fine coal ashes and soda, with a little water.

(14) W. B. H. says: Will you please give me the height of printer's type as usually made, in thousandths of an inch. A. $\frac{920}{1000}$ of an inch.

(15) J. M. D. asks: 1. What will be the result if I introduce a small amount of compressed air into boilers supplying steam to run compressor? A. Air and steam combined for motive force is an old idea, which has been tried and has failed; it costs more to introduce the air than its value. It will do no harm and little good. 2. What is the best lubricant for cylinders of engines driven by compressed air? A. Use light mineral oil. 3. What is meant by "clearance space" in cylinder? A. Clearance is the space between the cylinder head and the piston at the commencement of the stroke, and the steam passage between the valve and cylinder.

(16) W. H. S. asks for something, in liquid or any other form, good for purifying air in laboratory where acids and gases exist. A. We know of nothing but ventilation. The odors you wish to overcome are presumably stronger than anything you could use to neutralize them.

(17) C. E. B. asks: What material is used in taking a mould of one's head and shoulders, preparatory to making bust of plaster of Paris or clay? Also, how can one prepare or cover the hairy portions of the head and face? A. The person must lie on his back, his hair being tied behind; into each nostril put a conical piece of paper, open at each end, to allow of breathing. The face is to be lightly oiled over, and the plaster being properly prepared is to be poured over the face, taking particular care that the eyes are shut, till the plaster is a quarter of an inch thick. In this way a mould is to be formed from which a second cast is to be taken, that will furnish a cast exactly like the original. How such work can be done by those who are inexpert is described in the SCIENTIFIC AMERICAN of November 27, 1886.

(18) J. C. G.—Galvanized pipe for water for house supply is not poisonous if the water be kept running constantly. If the pipe is closed for a night, the water that the pipe contains should be drawn off before any water is used in the morning. The black pipe gives rusty water, and if of small diameter, soon stops up with rust nodules.

(19) A. L. P. asks what to use to paint cast iron vases with, white, that will stand the weather. A. White japan varnish baked on the vase in an oven or drying room at a temperature of 225° is the only white that will stand the weather. All air-drying paints weather.

(20) W. S. C. asks how to make black stencil blacking which is sold in cakes. A. Triturate together 1 part pure soot and 2 parts Prussian blue with a little glycerine, then add 3 parts gum arabic and sufficient glycerine to make the desired consistency.

(21) G. A. writes: We have an island on which poison ivy grows. What is the best means to exterminate it, and what is the antidote for ivy poisoning? A. The vines can only be removed by digging them up or burning them away. They cannot be destroyed except with other vegetation through fire and similar means. As an antidote, bathe the parts affected with a tablespoonful of sulphate of copper dissolved in a small teacupful of boiling water.

(22) W. S. asks (1) a recipe for a candy called butterscotch. A. Take 1 pound of sugar, ¾ pint of water, and set over a slow fire; when done, add 1½ tablespoonfuls of butter, and lemon juice to flavor. 2. What is the best paste, homemade? A. See recipe given in SCIENTIFIC AMERICAN SUPPLEMENT, No. 159. 3. How is ginger ale made? A. See article on "Summer Beverages," given in SCIENTIFIC AMERICAN SUPPLEMENT, No. 270.

(23) J. E. P., Jr., asks a receipt for overcoming the odor of corduroy. A. We doubt there being any practical remedy, except the equivocal one of substituting some other more powerful odor. There are kinds of corduroy which do not have much odor.

(24) A. C. D. asks how to make a filter for oil that has been used once in dynamo oil cups. This oil accumulates, and is not very dirty. A. Filtering through cotton or cotton waste is the simplest manner of purifying the oil, if it is not very dirty. When a more thorough filtering is needed, heat the oil with an equal quantity of water to 212° Fah., agitate for a short time, and allow it to cool before decanting.

(25) A. B. C. desires a recipe for making first class sticky fly paper. A. In a tin vessel melt together 1 pound of resin and add 2 fluid drachms of linseed oil; while the mixture is warm, dip a spatula into it, and spread what adheres to the blade on foolscap paper. Different samples of resin require varying proportions of oil to make the mixture spread properly.

(26) A. C. B. asks about painting posts with a mixture of boiled oil and pulverized coal. What kind of coal is used, and the best mode of pulverizing it? A. Use charcoal, which can be easily pulverized in a mortar. Coating posts, which have been charred, with coal tar is a better preservative, the absorbent properties of the charcoal on the surface causing the tar to penetrate to a good depth.

(27) W. J. E. asks: What proportion of an iceberg is under water? A. About seven-eighths of its volume.

(28) H. O. W. asks: 1. Is there any government land in Indiana or Illinois unclaimed? If so, how can it be acquired by settlers? A. Address the Land Commissioner of the States referred to. There is also an official of that title in Washington whom you may consult on these points. 2. Will tincture of cantharides cause increased growth of hair or beard without injury, and how is it applied? A. It is an irritant, and is used to induce growth where morbid action exists. It is the basis of many hair invigorators, but fails of action where the hair is dead. A well known preparation is: Scald black tea 2 ounces, with 1 gallon boiling water, strain, and add 3 ounces glycerine, tincture cantharides ½ ounce, and bay rum 1 quart. Mix well by shaking, and then perfume. 3. What will remove tan or sunburn from the face? A. Use a mixture of magnesia in soft water, spread on the face, and after a minute or two wash off with Castile soap suds and rinse with soft water.

(29) L. M. asks (1) for some receipt for promoting the growth of hair. A. See preceding answer to H. O. W. 2. One to remove the same without injury to the skin. A. Use a strong solution of barium sulphide made into a paste with powdered starch. It should be applied immediately after it is mixed, and allowed to remain there for 5 or 10 minutes. If not used very carefully, it may injure or mark the skin.

(30) G. H. S. asks: What will take oil, grease, butter, or any substance of an oily nature out of writing paper? A. Use pipe clay, powdered, and mixed with water to the thickness of cream; leave it on for some hours.

(31) Derfla asks how to restore a type writer ribbon where the ink has become dried in. A. If it has enough color left, put on a little glycerine. For a new ribbon, or complete renovating, take of aniline black ½ ounce, pure alcohol 15 ounces, and concentrated glycerine 15 ounces. Dissolve the aniline black in the alcohol and add the glycerine.

(32) W. S. asks: What is liquid anhydrous ammonia? Can you favor me with the method of making same on a small scale? A. It is liquefied ammoniacal gas, NH_3. Liquid ammonia may be produced by leading the anhydrous ammoniacal gas into a tube plunged in a freezing mixture composed of crystallized calcium chloride and ice, having a temperature of —40°. See Roscoe's "Treatise on Chemistry," vol. i.

(33) T. R. J. asks: Which of the common metals are most susceptible to heat and cold? A. Mercury and zinc.

MINERALS, ETC.—Specimens have been received from the following correspondents, and have been examined with results stated.

P. R.—The metallic portion is pyrite or sulphide of iron, and utterly valueless.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

May 31, 1887,

AND EACH BEARING THAT DATE.

[See note at end of list about copies of these patents.]

Abdominal supporter, S. A. Drewry 363,812
Adding machine, Smith & Shattuck 363,972
Advertiser, wire fence, E. K. Barnsdale 363,792
Air moistener, R. A. Roberts 364,136
Apron, hatmaker's, J. B. Alley 363,790
Arm rest, E. A. Bennett 364,088
Auger bit, C. Whitehouse 364,153
Axle, car, L. D. Allen 363,789
Axle lubricator, M. H. Wallace 363,924
Baby walker, Lane & Doney 363,899
Bale tie hooks, manufacture of, E. L. Clark 363,804
Baling press, C. E. Whitman 363,928
Bat, E. Cundey 364,160
Batteries, device for preventing the escape of noxious fumes from, Bailey & Warner 363,980
Bead, hollow oval or conical, W. S. Brown 363,885
Bed pan, A. V. Andrews 364,078
Bed, spring, J. Allan 363,878
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Bedsteads, gates, etc., brace for, Lenix & Swann 364,027
Bell, car, W. H. Hudson 363,958
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